IN THE CLAIMS:

This listing of the claims replaces all prior versions and listings of the claims in this application.

The text of all pending claims (including any withdrawn claims) is set forth below. Canceled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with <u>underlining</u> and deleted text with s̶t̶r̶i̶k̶e̶t̶h̶r̶o̶u̶g̶h̶. The status of each claim is indicated with one of (Original), (Currently amended), (Canceled), (Withdrawn), (Previously presented), (New), and (Not entered).

<u>No amendments have been made to the claims.</u> A clean copy of the claims is merely being provided for use in printing the patent to prevent errors due to the presence of underscores "_" in some of the terms in amended claims 1, 9, 10, 18, and 26 in the Amendment After Final Rejection of September 18, 2007, that were obscured by the underlining that was required to indicate added text pursuant to 37 CFR 1.121(c)(2). It is noted that the underscores "_" that appear in claims 1, 6, 7, 9, 10, 13, 14, 18, and 24-26 <u>are part of these claims and are to be printed in the patent.</u>

1. (Previously presented) A recording medium on which content stream data is recorded as a stream object, comprising:

one or more stream object units having the content stream data, each having a predetermined size and one or more stream packs,

each of the stream packs having at least part of an application time stamp indicating reproducing time information and an application packet, corresponding to the application time stamp, in which the content stream data is packed,

wherein each of the stream object units having the content stream data, excluding a last stream object unit, has at least one entire application time stamp;

wherein a size of the application packet is small enough so that each of the stream object units excluding the last stream object unit includes at least one entire application time stamp; and

wherein a size of an application packet AP_PKT_SZ satisfies the following relation:

$$AP\_PKT\_SZ \leq SPayload\_SZ \times \{SOBU\_SZ\} - \{N\_AHE + N\_SByte + ATS\_SZ\},$$

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where, SOBU_SZ denotes a size of a corresponding stream object unit, ATS_SZ denotes a size of an application time stamp which is formed in units of bytes, SPayload_SZ denotes a size of a data space containing information excluding a fixed header area from the stream pack, N_AHE denotes a number of application header extensions of said corresponding stream object unit, and N_SByte denotes a number of stuffing bytes of said corresponding stream object unit.

2. (Canceled)

3. (Previously presented) The recording medium of claim 1, wherein the last stream object unit has a stuffing packet for correction which includes a predetermined time stamp, said stuffing packet is recorded continuously after a last application packet in the stream object.

4. (Original) The recording medium of claim 3, wherein the predetermined time stamp is obtained by adding an integer to an application time stamp of a last application packet in the stream object.

5. (Canceled)

6. (Previously presented) The recording medium of claim 1, wherein the size of the application packet AP_PKT_SZ satisfies the following relation:

$$AP\_PKT\_SZ \le 2018*\{SOBU\_SZ\}-6,$$

where, SOBU_SZ denotes the size of said corresponding stream object unit.

7. (Previously presented) The recording medium of claim 1, wherein when N_SByte is 0, the size of the application packet satisfies the following relation:

$$AP\_PKT\_SZ \le 2018 \times \{SOBU\_SZ\}-5,$$

where, SOBU_SZ denotes the size of said corresponding stream object unit.

8. (Original) The recording medium of claim 7, further comprising:

a MAPping List (MAPL) having an Incremental Application Packet Arrival Time (IAPAT) indicating a duration of said corresponding stream object unit as search information indicating which of the stream object units is included in a corresponding stream object.

9. (Previously presented) A recording medium on which content stream data is recorded as a stream object, comprising:

one or more stream object units having the content stream data, each having a predetermined size and one or more stream packs,

each of the stream packs having at least part of an application time stamp indicating reproducing time information and an application packet, corresponding to the application time stamp, in which the content stream data is packed,

wherein a stream object unit having no application time stamp, among the stream object units having the content stream data, has a predetermined application time stamp and a stuffing packet for correction which is recorded continuously after a last application packet included in the stream object;

wherein a size of the application packet is small enough so that each of the stream object units excluding the stream object unit having no application time stamp includes at least one entire application time stamp; and

wherein a size of an application packet AP_PKT_SZ satisfies the following relation:

$$AP\_PKT\_SZ \leq SPayload\_SZ \times \{SOBU\_SZ\} - \{N\_AHE + N\_SByte + ATS\_SZ\},$$

where, SOBU_SZ denotes a size of a corresponding stream object unit, ATS_SZ denotes a size of an application time stamp which is formed in units of bytes, SPayload_SZ denotes a size of a data space containing information excluding a fixed header area from the stream pack, N_AHE denotes a number of application header extensions of said corresponding stream object unit, and N_SByte denotes a number of stuffing bytes of said corresponding stream object unit.

10. (Previously presented) A recording apparatus recording a stream object formed with at least one stream object unit having content stream data and having one or more stream packs, each of the stream packs having at least part of an application time stamp indicating

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reproducing time information and an application packet, corresponding to the application time stamp, in which the content stream data is packed, the recording apparatus comprising:

a control unit generating a mapping list as search information;

a clock generation unit generating a clock value;

a buffer unit buffering input content stream data, adding the clock value provided by the clock generation unit to the input content stream data, and outputting a result;

a Stream Object Unit (SOBU) generating unit packing the content stream data output from the buffer unit and generating the stream object units having the content stream data so that each of the stream object units, excluding a last stream object unit, includes at least one entire application time stamp; and

a recording unit recording the generated stream object units for the recording and the mapping list ;

wherein a size of the application packet is small enough so that each of the stream object units excluding the last stream object unit includes at least one entire application time stamp; and

wherein a size of an application packet AP_PKT_SZ satisfies the following relation:

$$AP\_PKT\_SZ \leq SPayload\_SZ \times \{SOBU\_SZ\} - \{N\_AHE + N\_SByte + ATS\_SZ\}$$

where, SOBU_SZ denotes a size of a corresponding stream object unit, ATS_SZ denotes a size of an application time stamp which is formed in units of bytes, SPayload_SZ denotes a size of data space containing information excluding a fixed header area from the stream pack, N_AHE denotes a number of application header extensions of said corresponding stream object unit, and N_SByte denotes a number of stuffing bytes of said corresponding stream object unit.

11.–12. (Canceled)

13. (Previously presented) The recording apparatus of claim 10, wherein the size of the application packet AP_PKT_SZ satisfies the following relation:

$$AP\_PKT\_SZ \leq 2018 \times \{SOBU\_SZ\} - 6$$

where, SOBU_SZ denotes the size of said corresponding stream object unit.

14. (Previously presented) The recording apparatus of claim 10, wherein when N_SByte is 0, the size of the application packet satisfies the following relation:

$$AP\_PKT\_SZ \leq 2018 \times \{SOBU\_SZ\}-5$$

where, SOBU_SZ denotes the size of the corresponding stream object unit.

15. (Previously presented) The recording apparatus of claim 10, wherein the mapping list includes an Incremental Application Packet Arrival Time (IAPAT) indicating a duration of the corresponding stream object unit, as search information indicating which of the stream object unit is included in a corresponding Stream Object (SOB).

16.–17. (Canceled).

18. (Previously presented) A recording apparatus recording a stream object formed with at least one stream object recording unit having one or more stream packs, each of the stream packs having at least part of an application time stamp indicating reproducing time information and an application packet, corresponding to the application time stamp, in which the content stream data is packed, the recording apparatus comprising:

a clock generation unit generating a clock value;

a buffer unit buffering input content stream data, adding the clock value provided by the clock generation unit to the input content stream data, and outputting a result;

a Stream Object Unit (SOBU) generating unit generating a plurality of stream object recording units;

a control unit generating search information by regarding a stream object recording unit having no application time stamp to include a predetermined application time stamp and search information; and

a recording unit recording the plurality of generated stream object recording units;

wherein a size of the application packet is small enough so that each of the plurality of stream object recording units, excluding a last stream object recording unit, includes one entire application time stamp; and

wherein a size of an application packet AP_PKT_SZ satisfies the following relation:

$$AP\_PKT\_SZ \leq SPayload\_SZ \times \{SOBU\_SZ\} - \{N\_AHE + N\_SByte + ATS\_SZ\}$$

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where SOBU_SZ denotes a size of a corresponding stream object recording unit, ATS_SZ denotes a size of an application time stamp which is formed in units of bytes, SPayload_SZ denotes a size of data space containing information excluding a fixed header area from the stream pack, N_AHE denotes a number of application header extensions of said corresponding stream object recording unit, and N_SByte denotes a number of stuffing bytes of said corresponding stream object recording unit.

19. (Original) The recording apparatus of claim 18, wherein the control unit generates search information by regarding a value which is obtained by adding an integer to a value of an application time stamp of a last stream pack included in the stream object, as the value of the predetermined application time stamp.

20. (Original) The recording apparatus of claim 19, wherein the search information includes a mapping list.

21. (Original) The recording apparatus of claim 18, wherein the control unit generates search information by regarding a value which is obtained by adding an integer to an integer part of an application time stamp of a last stream pack in the stream object, as the value of the predetermined application time stamp.

22.–23. (Canceled)

24. (Previously presented) The recording apparatus of claim 18, wherein the size of the application packet AP_PKT_SZ satisfies the following relation:

$$AP\_PKT\_SZ \leq 2018 \times \{SOBU\_SZ\}\text{-}6,$$

where, SOBU_SZ denotes the size of the corresponding stream object recording unit.

25. (Previously presented) The recording apparatus of claim 18, wherein when N_SByte is 0, the size of the application packet satisfies the following relation:

$$AP\_PKT\_SZ \leq 2018 \times \{SOBU\_SZ\}\text{-}5$$

where, SOBU_SZ denotes the size of the corresponding stream object recording unit.

26. (Previously presented) A reproducing apparatus reproducing data on a recording medium on which a stream object formed with at least one stream object unit having one or more stream packs, each of the stream packs having at least part of an application time stamp indicating reproducing time information and an application packet, corresponding to the application time stamp, in which the content stream data is packed, and a mapping list having search information, the reproducing apparatus comprising:

a reading unit reading the mapping list; and

a control unit searching for a corresponding stream object unit by referring to generated search information and by regarding a value which is obtained by adding an integer to a value of an application time stamp of a last stream pack of the stream object, as the value of an application time stamp for a last stream object unit in the stream object when referring to the read mapping list;

wherein a size of the application packet is small enough so that each of the stream object units excluding the last stream object unit includes at least one entire application time stamp; and

wherein a size of an application packet AP_PKT_SZ satisfies the following relation:

$$AP\_PKT\_SZ \leq SPayload\_SZ \times \{SOBU\_SZ\} - \{N\_AHE + N\_SByte + ATS\_SZ\},$$

where, SOBU_SZ denotes a size of a corresponding stream object unit, ATS_SZ denotes a size of an application time stamp which is formed in units of bytes, SPayload_SZ denotes a size of a data space containing information excluding a fixed header area from the stream pack, N_AHE denotes a number of application header extensions of said corresponding stream object unit, and N_SByte denotes a number of stuffing bytes of said corresponding stream object unit.

27. (Original) The reproducing apparatus of claim 26, wherein the search information includes an Incremental Application Packet Arrival Time.

28. (Original) The reproducing apparatus of claim 26, wherein the reading unit comprises:

a Stream Object Unit (SOBU) interpreting unit which reads the stream object units, interpreting the read stream object units, and outputting the content stream data;

a clock generating unit generating a clock value; and

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a buffer unit buffering the content stream data provided by the SOBU interpreting unit, based on the clock value provided by the clock generating unit, and outputting the content stream data.

29.–30. (Canceled)